

Please amend the claims according to the following listing of claims:

1. (Currently Amended) A method of making an arc tube chamber intermediate tubular end portions comprising the steps of:
 - (a) providing a tube of vitreous material ~~and positioning the tube so that its axis is substantially horizontal;~~
 - (b) heating a portion of the tube sufficiently to soften it in a predetermined area;
 - (c) axially compressing the tube to force the softened material in the heated area radially inward and outward around the circumference of the tube to thereby thicken the tube wall in the heated area;
 - (d) repeating step (b) and step (c) in areas of the tube proximate to the previously thickened tube wall at least one additional time to thereby thicken the wall of the tube over an axial distance approximating the length of the desired chamber;
 - (e) heating the thickened wall area of the tube;
 - (f) positioning a mold having a chamber cavity of a desired shape over the heated thickened wall area, the chamber cavity having a flattened portion at the longitudinal center thereof ~~being asymmetrical in horizontal cross-section;~~
 - (g) internally pressurizing the tube to expand the heated thickened area of the tube against the internal wall of the mold cavity to thereby form a chamber in the tube; and
 - (h) removing the mold from the chamber to thereby provide an arc tube chamber intermediate open tubular end portions.

2. (Original) The method of Claim 1 wherein the ratio of the diameter of the tube to the maximum vertical height of the mold cavity is between about 7/10 and about 7/30 to thereby reduce the amount of heat required doe the pinch seal.

3. (Original) The method of Claim 1 wherein the ratio of the diameter of the tube to the maximum horizontal width of the mold cavity is between about 7/10 and about 7/30 to thereby reduce the amount of heat required for the pinch seal.

4. (Original) The method of Claim 1 wherein the ratio of the maximum vertical height of the mold cavity to the maximum horizontal width of mold cavity is approximately one.

5. (Original) The method of Claim 1 wherein the two longitudinal halves of the mold cavity are symmetrical.

6. (Original) The method of Claim 1 wherein the mold cavity is symmetrical in vertical cross-section throughout the length thereof.

7. (Cancelled)

8. (Currently Amended) The method of Claim 1 wherein the tube is positioned so that its axis is substantially horizontal and the mold cavity is positioned with a the flattened portion side up in step (f).

9. (Original) The method of Claim 1 wherein the mold cavity is horizontally split for positioning in step (f).

10. (Currently Amended) The method of Claim 9 wherein the mold cavity is positioned with a the flattened portion side up in step (f).

11. (Currently Amended) The method of Claim 1 wherein the flattened portion ~~bottom~~ of the mold cavity is flattened in an area between about 20 and about 80 percent of the maximum width of the mold cavity.

12. (Currently Amended) The method of Claim 1 wherein the flattened portion ~~bottom~~ of the mold cavity is flattened in an area between 20 and about 80 percent of the maximum length of the mold cavity.

13. (Currently Amended) The method of Claim 12 wherein the flattened portion ~~bottom~~ of the mold cavity in the longitudinal center thereof is flattened over a distance between about 50 and about 60 percent of the mold cavity.

14. (Currently Amended) The method of Claim 1 wherein a portion ~~the top~~ of the mold cavity opposite the flattened portion is arched.

15. (Original) The method of Claim 1 wherein the mold cavity is widest at the longitudinal center of the cavity and progressively more narrow towards the ends of the chamber.

16. (Original) The method of Claim 1 wherein the mold cavity is tallest at the longitudinal center of the cavity and progressively more narrow towards the ends of the chamber.

17. (Original) The method of Claim 1 comprising the further steps of:

- (i) positioning an in-lead connector, foil and electrode assembly within each open tubular ends;
- (j) heating the open tubular ends; and

(k) pinch sealing the open tubular ends over a portion of the assembly to thereby form an arc tube.

18. (Currently Amended) A mold for forming a bulbous arc tube chamber intermediate tubular end portions in a formed body arc tube, said mold defining a cavity having a flattened side at the longitudinal center thereof.

19. (Previously Presented) A method of making an arc tube chamber intermediate tubular end portions comprising the steps of:

- (a) providing a tube of vitreous material;
- (b) heating a portion of the tube sufficiently to soften it in a predetermined area;
- (c) axially compressing the tube to force the softened material in the heated area radially inward and outward around the circumference of the tube to thereby thicken the tube wall in the heated area;
- (d) repeating step (b) and step (c) in areas of the tube proximate to the previously thickened tube wall at least one additional time to thereby thicken the wall of the tube over an axial distance approximating the length of the desired chamber;
- (e) heating the thickened wall area of the tube;
- (f) positioning a mold having an elongated chamber cavity over the heated thickened wall area, the chamber cavity being asymmetrical at the longitudinal center thereof in at least one longitudinal cross-section ;

(g) internally pressurizing the tube to expand the heated thickened area of the tube against the internal wall of the mold cavity to thereby form a chamber in the tube; and

(h) removing the mold from the chamber to thereby provide an arc tube chamber intermediate open tubular end portions.

20. (Previously Presented) The method of Claim 19 wherein the chamber cavity is symmetrical in at least one longitudinal cross-section.

21. (Previously Presented) The method of Claim 20 wherein a symmetrical cross-section is perpendicular to an asymmetrical cross-section.

22. (Currently Amended) The method of Claim 19 wherein the mold cavity has a flattened area at the longitudinal center thereof.

23. (Previously Presented) The method of Claim 22 wherein the flattened area of said mold cavity is positioned in the uppermost area of said mold cavity.

24. (Previously Presented) The method of Claim 22 wherein the flattened area of said mold cavity is positioned in the lowermost area of said mold cavity.

25. (Previously Presented) The method of Claim 22 wherein the mold is split in two portions.

26. (Previously Presented) The method of Claim 25 wherein only one portion of the mold defines the flattened area of the mold cavity.

27. (Currently Amended) A mold for forming an elongated bulbous chamber intermediate tubular end portions in an arc tube, said mold defining a cavity being asymmetrical at the longitudinal center thereof in at least one longitudinal cross-section.

28. (Previously Presented) The mold of Claim 27 being symmetrical in at least one longitudinal cross-section.

29. (Previously Presented) The mold of Claim 28 wherein a symmetrical longitudinal cross-section is perpendicular to an asymmetrical longitudinal cross-section.

30. (Previously Presented) The mold of Claim 27 defining a cavity having a flattened portion.

31. (Previously Presented) The mold of Claim 27 defining a cavity having a canoe-shaped portion.

32. (New) The method of Claim 1 wherein the flattened portion of the cavity is slightly v-shaped across the width of the cavity.

REMARKS

Applicant notes the indicated allowability of Claim 13.

Claims 1-6, 8-12, and 14-31 stand rejected as obvious over U.S. Patent No. 4,891,555 to Ahlgren et al. (“Ahlgren”) in combination with U.S. Patent No. 5,525,863 to Kowalczyk et al. (“Kowalczyk”).

Independent Claim 1, as amended, claims a method of making an arc tube chamber intermediate of tubular end portions comprising the step of, *inter alia*, positioning a mold with a chamber cavity “having a flattened portion at the longitudinal center thereof.” Independent Claim 19, as amended, claims a method of making an arc tube chamber intermediate of tubular end portions comprising the step of, *inter alia*, positioning a mold with a chamber cavity wherein the chamber cavity is “asymmetrical at the longitudinal center thereof in at least one longitudinal cross-section.” Independent Claim 18, as amended, claims a mold for forming a bulbous arc tube chamber intermediate tubular end portions in a formed body arc tube wherein the mold defines a cavity “having a flattened side at the longitudinal center thereof.” Independent Claim 27, as amended, claims a mold for forming an elongated bulbous chamber intermediate tubular end portions in an arc tube wherein the mold defines a cavity “being asymmetrical at the longitudinal center thereof in at least one longitudinal cross-section.”

The examiner agrees that there is no disclosure or suggestion in Ahlgren of forming a chamber having an asymmetrical shape, including the specified asymmetrical shape resulting from a flattened portion at the longitudinal center thereof. The examiner bases the rejection on the assertion that the fact that Ahlgren fails to teach an

asymmetrical shape is “immaterial since one of ordinary skill would have recognized that asymmetrical shapes could be blow molded as taught by Kowalczyk.”

The examiner appears to have misinterpreted what Kowalczyk fairly discloses. Kowalczyk discloses pinching (i.e. compressing) the end portions of a cylindrical tube to form shaped end portions of a substantially cylindrical chamber. Kowalczyk discloses that the wall thickness of the compressed end portions were found to be surprisingly uniform and hypothesizes that the uniform wall thickness may be due to “blow molding” the softened glass in the pinch jaws, i.e., applying internal pressure to smooth out the softened glass that is being compressed by the pinch jaws.

Kowalczyk adds nothing to the teaching of Ahlgren. There is no teaching or suggestion whatsoever in Kowalczyk of applying internal pressure to a softened tube to expand the tube into a mold to form a bulbous chamber. Moreover, there is no teaching or suggestion in either reference that a portion of the longitudinal center of a bulbous arc tube chamber may be flattened, or that the chamber may be asymmetrical at the longitudinal center thereof in longitudinal cross-section.

Still further, Kowalczyk expressly teaches away from flattening the walls of the chamber at the longitudinal center thereof. The examiner appears to rely on the teaching in Kowalczyk of applying internal pressure to obtain uniform wall thickness as curing the deficiencies expressly recognized in Kowalczyk of flattening the chamber walls on the basis that “blow molding of the tube results in elimination of crevices ...”. The examiner’s position is not logical and the reliance on Kowalczyk is in error . Clearly Kowalczyk teaches that flattening the walls is a deficiency in the prior art. If the

examiner's assertion were correct, then Kowalczyk would have taught that the deficiency may be overcome by blow molding. Kowalczyk makes no such teaching. To the contrary, Kowalczyk teaches that the chamber must remain cylindrical (and symmetrical) at the longitudinal center thereof and that the axis of the electrodes may be lowered to reduce the distance between the electrode axis and the bottom to the cylindrical chamber.

It is not logical to conclude that the teaching in Kowalczyk of applying internal pressure when pinch sealing the end portions of the arc tube overcomes the express teaching away from flattening the walls found in the very same reference. Kowalczyk expressly teaches that such flattening is undesirable because it creates locations where the vaporized lamp fill may condense and pool during operation of the lamp. (column 2, lines 42-49), and expressly teaches that such deficiency may be overcome by maintaining a cylindrical chamber and lowering the electrodes. Applicant has discovered a contrary solution and it is pure hindsight to suggest that applicant's claimed inventions are obvious the asserted combination.

There is no suggestion or motivation from either Ahlgren or Kowalczyk to combine the references as relied upon by the examiner, and in fact Kowalczyk expressly teaches away from the asserted combination.

Reconsideration and withdrawal of the rejections based on the combination of Ahlgren and Kowalczyk is solicited.

Further, the dependant claims each include additional patentable limitations. For example, Claim 31 is directed to a mold defining a cavity having a "canoe-shaped"

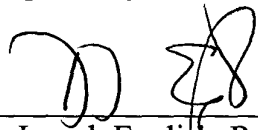
portion. There is no disclosure or suggestion in any reference of an arc tube chamber having a "canoe-shaped" portion as claimed.

Consideration and allowance of Claim 32 is solicited. No new matter has been added.

Reconsideration and withdrawal of the rejection is solicited. A further and favorable Action and allowance of all claims is solicited.

Respectfully submitted,

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